STAUFFER CHEMICAL COMPANY
WESTERN RESEARCH CENTER

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cc: J. F. Heil
R. L. Joiner
G. Cummings
G. D. Meyding
R. L. Riggs
J. A. Kieft
R. L. Skiles, MVRC
J. J Menn, "

TOXICOLOGY LABORATORY REPORT -- T- 4886

SAFIDON 50 W (Imidan Tech-Hungary)

I. OBJECTIVE

To evaluate the toxicological aspects of this material.

II. MATERIALS

Safidon 50 W (Imidan tech - Hungary), 3169/42/4, a fine beige powder, was received from RRC on 5/29/74.

III. SUMMARY

A. Acute oral LD_{50}, male rats, mg/kg: 794(584-1080)

B. Acute oral LD_{50}, female rats, mg/kg: 369(227-599)

C. Skin irritation classification: noncorrosive (4-hr. exposure)

D. Eye irritation classification: nonirritant

E. Acute dermal LD_{50}, rabbits, mg/kg: >4640

F. Acute inhalation LC_{50}, rats, mg/liter/hour: > 0.34

G. Chronic static rat inhalation, no effect level: >5 day, 4 hours per da

Submitted by D Jimenez
P. Jimenez

Approved by R L Joiner
R. L. Joiner

RLJ:ea

A. ACUTE RAT ORAL TOXICITY

TEST MATERIAL: SAFIDON 50 W T-4886

LD_{50}, mg/kg: 794 (584-1080)

This test procedure is in accordance with the Code of Federal Regulations (Part 191.1, Chap. I, Title 21) for evaluating highly toxic substances.

Sprague-Dawley albino rats were used for test purposes. The test material was administered in single doses by means of a stomach tube. Five animals were used for each dose level. The animals were fasted for 24 hours prior to treatment. The animals were observed for 14 days after treatment for mortalities and signs of toxicity.

Animal sex: male Weight Range: 155-205 g

Concentration: 20% Vehicle: water

Dose Level mg/kg	215	464	1000	2150
Mortality Ratio	0/5	0/5	4/5	5/5

Signs of Toxicity: Rats at the 215 mg/kg dose level exhibited slight signs of cholinesterase inhibition within 40 minutes, but were normal within 16 hours. At the 464 mg/kg dose level rats exhibited moderate to slight cholinesterase inhibition with lachrymation and diarrhea until the second day. They were slightly depressed, after five days they were normal. At the 1000 and 2150 mg/kg level rats exhibited moderate to severe cholinesterase inhibition and lachrymation.

Additional Comments: None.

B. ACUTE RAT ORAL TOXICITY

TEST MATERIAL: SAFIDON 50 W T-4886

LD_{50}, mg/kg: 369 (227-599)

This test procedure is in accordance with the Code of Federal Regulations (Part 191.1, Chap. I, Title 21) for evaluating highly toxic substances.

Sprague-Dawley albino rats were used for test purposes. The test material was administered in single doses by means of a stomach tube. Five animals were used for each dose level. The animals were fasted for 24 hours prior to treatment. The animals were observed for 14 days after treatment for mortalities and signs of toxicity.

Animal sex: female Weight Range: 170-270 g

Concentration: 20% Vehicle: water

Dose Level mg/kg	100	215	464	1000
Mortality Ratio	0/5	1/5	3/5	5/5

Signs of Toxicity: Rats at the 100 and 215 mg/kg dose level exhibite slight to moderate ataxia or moderate depression the first day of dosing and were normal by the third day. At the 464 and 1000 mg/kg level rats exhibited severe ataxia or slight to severe depression.

Additional Comments: None.

TEST MATERIAL: SAFIDON 50 W T-48

Skin irritation classification: NONCORROSIVE

Primary skin irritation was determined according to the proposed FDA revision of the test for primary skin irritants published in the Code of Federal Regulations (Part 191, Chapter 1, Title 21) for evaluating hazardous substances.

The proposed test differs from the procedure described in the Hazardous Substances Labeling Act, Part 191.11, Chapter 1, Title 21 in that irritation is determined after a 4-hour exposure period rather than after the previously required 24-hour exposure period. In the proposed test, readings are made 4- 24- and 48-hours after treatment. Animals are to be retained for observation 96 hours after initial application. Any delayed necrosis will be reported, but the data will not be used in determination of irritation indices. A corrosive substance is defined as a material that causes tissue destruction within 48 hours after application on any of the twelve intact sites.

Rabbit No.	Skin	Erythema-eschar Observation 4 hr.	24 hr.	48 hr.	Edema Observation 4 hr.	24 hr.	48 hr.	Sum Total	Score
1	Intact	0 0	0 0	0 0	0 0	0 0	0 0	0	0
2	Intact	0 0	0 0	0 0	0 0	0 0	0 0	0	0
3	Intact	0 0	0 0	0 0	0 0	0 0	0 0	0	0
4	Intact	0 0	0 0	0 0	0 0	0 0	0 0	0	0
5	Intact	0 0	0 0	0 0	0 0	0 0	0 0	0	0
6	Intact	0 0	0 0	0 0	0 0	0 0	0 0	0	0
Primary Irritant Score ----------									0

*Score = Sum of individual values for each rabbit divided by six.

Observation: Rabbits were normal 4 hours, 24 hours, and 48 hours after dosing.

FDA PROPOSED REVISION OF TEST FOR PRIMARY SKIN IRRITANTS

From § 191.11, paragraph (c), the following TABLE:

Skin Reaction	Value
Erythema and eschar formation:	
No erythema	0
Very slight erythema (barely perceptible)	1
Well-defined erythema	2
Moderate to severe erythema	3
Severe erythema (beet redness) to slight eschar formation (injuries in depth)	4
Edema formation:	
No edema	0
Very slight edema (barely perceptible)	1
Slight edema (edges of area well defined by definite raising)	2
Moderate edema (raised approximately 1 millimeter)	3
Severe edema (raised more than 1 millimeter and extending beyond the area of exposure)	4

D. EYE IRRITATION

TEST MATERIAL SAFIDON 50 W T- 4886

Eye Irritation Classification: NONIRRITANT

The procedure employed is in accordance with the test for eye irritants outlined in the code of Federal Regulations (Part 191.12, Chap. 1, Title 21) for evaluating hazardous substances.

Six New Zealand rabbits in the 1.6-2.1 kg weight range were used as the test animals. The test material was placed in one eye of each animal by gently pulling the lower lid away from the eyeball to form a cup into which the test material is dropped. The lids were gently held together for three seconds and the animal released. The other eye, remaining untreated, served as the control. The eyes were observed at 24- 48- and 72-hours following treatment and scored for irritation properties.

Quantity instilled into each test site: 10 mg

Corneal Damage: None.

Iritis: None.

Conjunctivae,

a) erythema: None.

b) chemosis: None.

c) discharge: There was no discharge from the rabbits eyes.

Signs of Remission: N/A

Additional Comments: None.

E. ACUTE RABBIT DERMAL TOXICITY

TEST MATERIAL: SAFIDON 50 W T- 4886

LD_{50} mg/kg: > 4640

The test procedure employed is in accordance with the procedure described in the Code of Federal Regulations (Part 191.1, Chap I, Title 21) for evaluating highly toxic substances.

New Zealand white albino rabbits, in the 1.8-2.3 weight range were used in this study. Two male and two female rabbits had the test material applied to the closely clipped, intact abdominal skin beneath a protective binder. After a 24-hour period, the binder material was removed, the abdominal skin was inspected for irritation, and the test site was washed with soap and water and rewrapped in a gauze binder. The test animals were observed for a 14-day period following the initial treatment.

Dose Level mg/kg	4640			
Mortality Ratio	0/5			

Signs of Toxicity: None.

Local Effects: None.

Additional Comments: None.

F. ACUTE RAT INHALATION

TEST MATERIAL SAFIDON 50 W T- 4886

LC_{50} mg/liter/hour: >0.34

Five male and five female Sprague-Dawley albino rats were exposed to the test material for one hour in a 32 liter, positive pressure inhalation chamber. Ten animals were used at each concentration level. The animals were observed for 14 days, after exposure, for signs of toxicity.

Method of generation: Wright dust feed mechanism

Weight range of test animals: 200 grams

Concentration level mg/liter/hour	0.34
Mortality Ratio	0/10

Sign of Toxicity: Rats appeared slightly depressed during testing and normal after testing was completed.

Additional Comments: The powder was very light and fine which caused difficulties in filling the dust feed mechanism.

G. CHRONIC STATIC RAT INHALATION

TEST MATERIAL: SAFIDON 50 W T-4886

NO EFFECT LEVEL: >5 days, 4 hours per day.

Five male and female Sprague Dawley albino rats were used for test purposes. The exposures were performed in an eight cubic foot plexiglass static inhalation chamber. The test material was exposed in 4 open petri dishes beneath a wire grid inside the chamber. The wire grid was taped in four places above the petri dishes to keep out rat feces. The samples were weiged before testing. The test animals were fasted for 24-hours prior to treatment and were not given water during exposures. They were observed during the exposure periods for mortalities and signs of toxicity, and 14 days after treatment.

Weight range of test animals: 200 grams

Weight per petri dish, per day: 5 grams

Signs of Toxicity: All rats were normal during and after testing after 5 exposures of concentrated vapors of Safidon 50 W.

Additional Comments: The test material was not reweighed after treatment as the compound absorbed moisture from the air.